

Applicant(s): P. Bonutti
Application No.: 10/078,030
Examiner: G. Jackson

Amendments to the Claims

1. (Currently amended) An apparatus for use in positioning ~~a suture~~ an anchor member relative to body tissue, the apparatus comprising

a tubular member through which the ~~suture~~ anchor member is movable and including an end portion operable between a closed condition blocking movement of the anchor member through the end portion into the body tissue and an open condition in which the end portion is ineffective to block movement of the anchor member into the body tissue, and

a pusher member which is at least partially disposed in and is movable relative to the tubular member to move the anchor member relative to the tubular member, ~~said tubular member having an end portion which is operable between a closed condition blocking movement of the anchor through the end portion of the tubular member into the body tissue and an open condition in which the end portion of the tubular member is ineffective to block movement of the anchor into the body tissue~~

wherein the end portion has a pointed end in the closed condition, the end portion configured and dimensioned for piercing an imperforate surface on the body tissue.

11. (Currently amended) A method of positioning ~~a suture~~ an anchor member relative to body tissue, the method comprising the steps of

positioning an end portion of a tubular member relative to body tissue with the end portion of the tubular member in a closed condition at least partially blocking a passage in the tubular member,

moving the tubular member into body tissue by piercing the body tissue with the end portion of the tubular member,

moving ~~a suture~~ an anchor member along the passage in the tubular member with a suture disposed in engagement with the ~~suture~~ anchor member,

operating the end portion of the tubular member from the closed condition to an open condition, and

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moving the ~~suture~~ anchor member through the end portion of the tubular member into the body tissue while the end portion of the tubular member is in the open condition.

64. (Currently amended) A method of positioning an anchor relative to body tissue, the method comprising the steps of

positioning an end portion of a resilient tubular member relative to body tissue with the end portion of the resilient tubular member in a closed condition at least partially blocking a postage passage in the resilient tubular member,

resiliently expanding the resilient tubular member by moving a tubular expansion member along a passage in the resilient tubular member,

operating the end portion of the resilient tubular member from the closed condition to an open condition by applying force against the end portion of the resilient tubular member with the expansion member, and

moving ~~an~~ the anchor along a passage in the expansion member through the end portion of the resilient tubular member into the body tissue while the end portion of the resilient tubular member is in the open condition.

65. (New) The apparatus of claim 1 further comprising indicia disposed on the end portion of the tubular member, the indicia indicating a depth of insertion of the end portion into body tissue as the body tissue is pierced by the pointed end.

66. (New) The apparatus of claim 1 wherein the end portion of the tubular member comprises a plurality of segments, each of the segments including an inner surface, an outer surface and a plurality of side surfaces which extend between the inner and outer surfaces, the side surfaces on each of the segments being disposed adjacent to side surfaces on adjacent segments when the end portion of the tubular member is in the closed condition, the outer surfaces on the segments cooperating to form the pointed end of the tubular member when the end portion is in the closed position.

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67. (New) The apparatus of claims 66 wherein the tubular member includes a sheath through which the anchor member is movable, the sheath resiliently expandable under the influence of force transmitted from the anchor member to the sheath as the anchor member is moved through the tubular member by the pusher member.

68. (New) The apparatus of claim 1 wherein the tubular member includes a sheath through which the anchor member is movable, the sheath resiliently expandable under the influence of force transmitted from the anchor member to the sheath as the anchor member is moved through the tubular member by the pusher member.

69. (New) The apparatus of claim 68 wherein the tubular member further comprises an array of wires which extend along an inner side of the sheath.

70. (New) The apparatus of claim 69 wherein the array of wires blocks engagement of the anchor member with the sheath during movement of the anchor member relative to at least a portion of the tubular member.

71. (New) The apparatus of claim 69 wherein the pointed end of the tubular member is formed by the sheath and the array of wires.

72. (New) The apparatus of claim 1 wherein the closed condition of the end portion of the tubular member blocks movement of the body tissue through the end portion into the tubular member.

73. (New) The method of claim 11 wherein the tubular member includes a plurality of wires which extend along a passage in the tubular member.

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74. (New) The method of claim 73 wherein moving the anchor member along a passage in the tubular member includes sliding the anchor member along the wires and moving the anchor member out of the passage in the tubular member into the body tissue.

75. (New) The method of claim 11 further comprising expanding at least a portion of the passage in the tubular member by transmitting force from a leading end portion of the anchor member to the tubular member while moving the anchor member along the passage in the tubular member.

76 (New) The method of claim 11 wherein the step of piercing the body tissue includes forming an opening in the body tissue at a location which is free of naturally occurring openings.

77. (New) The method of claim 11 further comprising expanding at least a portion of the passage in the tubular member by resiliently stretching material which forms at least a portion of the tubular member.

78. (New) The method of claim 11 further comprising moving segments of the end portion of tubular member which pierced the body tissue from an closed position in which portions of the segments of the end portion of the tubular member are disposed in engagement with each other to an open position in which the portions of the segments of the end portion of the tubular member are spaced apart from each other.

79. (New) The method of claim 11 further including the steps of covering indicia on the tubular member with body tissue as the tubular member is inserted into the body tissue, and interrupting insertion of the tubular member into body tissue in response to covering of indicia corresponding to a desired depth of insertion of the tubular member into body tissue.